

## THE NON-MARINE MOLLUSC FAUNA OF THE OTWAY REGION OF VICTORIA

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**ABSTRACT:** This study forms part of a wider survey of non-marine molluscs of Southeastern Australia and the fauna of the Otway Region is typical of this faunal zone. The fauna consists of 25 families and approximately 70 species of molluscs. Several have their type localities in the Otway Region: examples are *Victaphanta compacta*; *Gemmoropa scindocataracta*; *Pillomena (Oreonava) otwayensis*. However, very few species are endemic and unique to the area and, after further survey and systematic work, several now thought to be confined to the area could prove to have wider distributions.

Five main habitat-faunal associations are recognised for the non-marine molluscs of the Region: marine influence zone; freshwater; wet sclerophyll and rain forest; dry sclerophyll forest and woodland scrub; areas modified by man. Each of these habitats has its own faunal association and very few species are found in more than two habitat types.

The non-marine mollusc fauna of the Otway Region is in general similar to that of central and eastern Victoria, though with a smaller species diversity: several species are conspicuous by their absence. For a number of species the Otway Region is the western extremity of their distribution range. The relationships of the molluscan fauna of the area are compared with neighbouring regions in Victoria, South Australia and Tasmania.

### INTRODUCTION

Compared with other parts of Australia, the non-marine mollusc fauna of Victoria is fairly well documented. Several early records of Victorian molluscs were made by Cox (1868) and later general work by Cox and Hedley (1912) and Gabriel (1930, 1939, 1947) provided much valuable data, while Iredale (1933, 1937, 1938) erected many new genera. However the only detailed description of the non-marine mollusc fauna of any area of Victoria, as opposed to a purely systematic work, remains the work on the molluscs of the Snowy River Area by Gabriel and Macpherson (1947).

The Otway Region of south-western Victoria, south of the basalt plains of central western Victoria, is a discrete area for faunal studies. Dominated by the Otway Ranges, the area has been separated from the topographically similar areas of eastern Victoria several times during recent geological history (Gregory 1912, Hills 1940) and is now separated from it by the cleared and developed Melbourne-Geelong corridor. This study of the non-marine molluscs of the Otway Region is part of a wider study of the non-marine molluscs of Southeastern Australia. It is a distribu-

tional survey into which systematic and ecological data of the fauna are also collated.

The molluscan fauna of the Otways is essentially similar to that of the remainder of southern Victoria. This study is intended to give current knowledge of the fauna, to show how the distribution of the molluscs of the area is closely related to the major habitat types, and to compare the fauna of the Otways with that of the remainder of Southeastern Australia. A significant part of the distributional and ecological data used was provided by Mr. and Mrs. F. W. Aslin of Mt. Gambier and Mr. D. C. Long, now of Cheltenham, U.K., to whom thanks are due.

### FAUNAL REVIEW

A complete systematic list of the non-marine mollusc fauna of the Otways Region is given in the Appendix. The taxonomy of many of the groups is much in need of revision and many of the generic and specific names used in this listing should be regarded as provisional, subject to full revisionary studies being carried out. A systematic revision is not being undertaken here, but in several families radical changes have occurred in the taxonomy of many species since the last works on the groups were published. Where this has

occurred, brief notes to the major directions of these changes are given.

To typify the molluscan fauna of the area, distribution maps are given for several of the most important species (Figs. 1-8). The maps are based on a five minute grid, a subdivision of the basic ten minute grid being used for the survey of the molluscs of Southeastern Australia.

#### FAMILY HYDROBIIDAE

This family of small aquatic operculate snails contains a large number of species endemic to Southeastern Australia. This complex is the subject of current taxonomic revision and the final status of the generic and specific names used here will have to await the results of this revision.

Five species are recognised from the Otway Region. *Tatea rufilabris* which is confined to the estuarine reaches of most of the major creeks and rivers has a shell length extending to 10-12 mm with a very acute pointed spire. *Potamopyrgus nigra* and *Hydrobia buccinoides* are both found in some localities which from time to time receive saline waters. However they are basically freshwater species with a wide saline tolerance rather than estuarine species, and are most abundant in the coastal streams, well above the regions of tidal influence. These two species have a basically similar appearance being 2-5 mm in length with a short spire. *Angrobia angasi* and *Pupiphrix grampianensis* are somewhat smaller than the preceding species with a shorter spire. These are usually found in small freshwater creeks and occur both in the upper reaches of the coastal streams and in the creeks high up in the Ranges. Generic and specific differences depend upon detailed anatomical studies, with shell characters playing only a minor role.

#### FAMILY LYMNAEIDAE

Following the works of Hubendiek (1951) and Boray and McMichael (1961), only two species of this family are recognised for Australia and both occur in the Otway Region. The most common, *Lymnaea tomentosa*, is a small to medium sized dextral species found in streams, ponds and dams throughout the area. *Lymnaea lessoni* is a large, inflated species with a discontinuous distribution throughout Victoria. It is recorded from several ponds in the northern part of the study area adjacent to cleared land.

#### FAMILY PLANORBIDAE

This family of sinistral snails is the dominant freshwater gastropod group in Southeastern Australia, with many specific and generic names appearing in the literature. Two major shell forms are present: large shells with a high spire and small planispiral shells. Within these groups are a wide variety of shell forms

and shapes, most of which at some time have attracted new specific and generic names. A comprehensive revision of this family is long overdue and should include anatomical studies.

Six species are tentatively recognised from the area, three with a high spire and three planispiral. *Physastra gibbosa* is a medium to large species with a smooth, high spired shell found mainly in stagnant or very slow moving water. *Gyraulus* sp., the largest planispiral species with an acute baso-peripheral keel is found in similar habitats.

*Bulinus (Isidorella) hainesii* and *Glyptophysa aliciae*, the two other high spired species occur in flowing freshwater. The latter is known from only one or two localities in the northern part of the area. These species have fine spiral striae on the shell and fine periostracal hairs. In *G. aliciae* the striae are greatly enlarged to form spiral ridges.

The two other planispiral species found in the area are *Plananaisus tasmanicus* and *Pygmanisus scottianus*. These have small shells with peripheral keels either less marked or absent and are found in flowing fresh water.

#### FAMILY FERRISSIIDAE

The two closely related species of freshwater limpets found in the area are referred to this family following Zileh (1959), and to species after a revision of the group by Hubendiek (1967). The species are *Ferrissia (Pettancylus) petterdi* and *F. (P.) tasmanica*. Both appear to be found in both stagnant and flowing water throughout the area with *F. (P.) tasmanica* the commoner and more wide spread. Further work is needed on the ecological preferences of these two species.

#### 'ENDODONTOIDS' — FAMILIES PUNCTIDAE and CHAROPIDAE

The dominant group of snails in the Southeastern Australian non-marine mollusc fauna is the 'endodontoids'. They are small to minute species, with an average shell diameter of 1-2 mm. Over 80 species are present in this faunal region (Southeastern Australia) and 17 in the study area. Until recently it has been generally considered that all these species belonged to a single family the Endodontidae. However recent work (principally by Solem, as yet unpublished) foreshadowed in Solem (1973) and Climo (1969) suggests that this is an artificial group and should be divided into a number of families based on anatomical characters.

The two families to which most or all the endodontoids in the Otway region should be referred are the Punctidae and the Charopidae. Full revisions of this fauna are being undertaken at present and while no firm results have emerged, it is possible tentatively to assign most of the species to families and to give some idea of



their relationships. Whether all the species recognised in this study will emerge as accepted species after the revisionary work has been completed is not yet known.

Several of the species in these families were first described from within the Otway Region and are thought to be endemic to this area. These include *Pernagera gatliffi*, *Geminoropa scindocataracta*, and *Allocharopa erskinensis*, all of which come from the wet sclerophyll forest areas of the Otway Ranges.

#### FAMILY ARIONIDAE

This family of introduced slugs was only recently confirmed as being well established in Australia (Long 1970) and *Arion intermedius* has a widespread distribution within the Otway Region (Fig. 1). The species is small with a yellow foot and mucus, and a prominent caudal gland. It is found in forest areas adjacent to man-modified habitat and probably penetrates the farthest into native bush areas of all the introduced species.

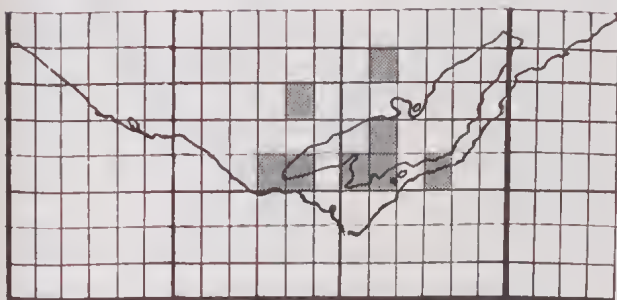


Fig. 1. Distribution of *Arion intermedius*. The study area overlaid with a 5 minute grid. The irregular outline is the 1000 m contour denoting the Otway Ranges.

#### FAMILIES MILACIDAE and LIMACIDAE

These are two more families of introduced slugs, the Australian species of which have recently been revised (Altena & Smith 1975). All six of the species known from Australia occur in the study area, mainly confined to cleared and other areas modified by man. The distribution of one of the species, *Lehmannia* (*Lehmannia*) *nyctelia*, only recently recognised in Australia, is given in Fig. 2.

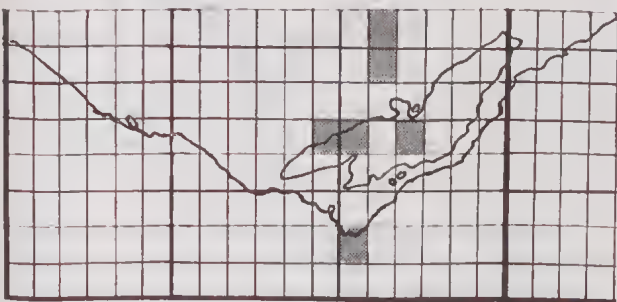


Fig. 2. Distribution of *Lehmannia* (*Lehmannia*) *nyctelia*.

#### FAMILY HELICARIONIDAE

Two closely related species of this family occur in the Otway Region. *Helicarion niger* typically has a dark horn-brown shell, is a dark to black animal, and is mainly found in dry sclerophyll forest and coastal scrub areas (Fig. 3). *Helicarion cuvieri* is a larger, more lightly coloured animal with a light yellowish-green shell. This species is much less common and appears to prefer wetter forest areas.

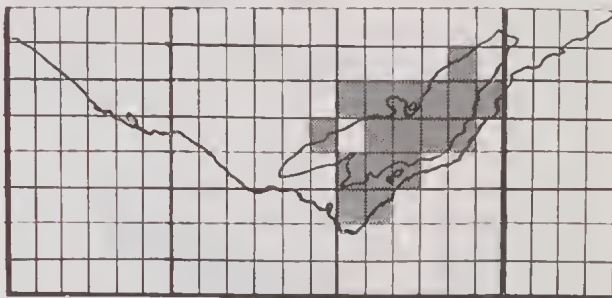


Fig. 3. Distribution of *Helicarion niger*.

A revision of this family is being undertaken at present and a clearer idea of the status of these two species will emerge from this study.

#### FAMILY CYSTOPELTIDAE

This is the only family of native slugs present in Southeastern Australia and, due mainly to the lack of anatomical studies, the status of the various species referred to the family is in doubt. The distribution of *Cystopelta purpurea* is given in Fig. 4. It is found in both wet and dry sclerophyll forests.

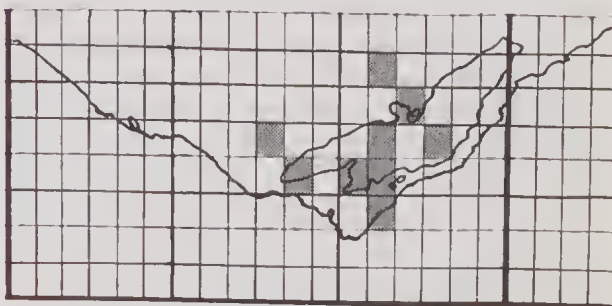


Fig. 4. Distribution of *Cystopelta purpurea*

#### FAMILY FERUSSACIIDAE

This small, horn-coloured pupoid introduced snail, *Ferussacia* sp., not previously recorded from Victoria, has recently been found in a suburban garden on the southern outskirts of Colac. The only other record of this species in Australia is from Linden Park, Adelaide (Cotton 1954). Work is under way at the moment to confirm this record as an established population.

#### FAMILY RHYTIDIDAE (PARYPHANTIDAE)

This family of carnivorous snails is widespread and

common in eastern Australia with many species with restricted distributions. It is currently the subject of taxonomic revision by the author. Five species are present in the Otway Region, of which one species is endemic. External characteristics of the family, adaptations to the carnivorous habit, are the thin, lightweight shell and very long head which contains the large muscular buccal mass.

The largest native snail in the Otway Region, *Victaphanta compacta*, is endemic to the rainforest areas of the Otway Ranges (Fig. 5). The genus *Victaphanta* was the subject of recent studies (Smith 1970, Smith & Kershaw 1972) and is endemic to the Southeastern Australian faunal region.

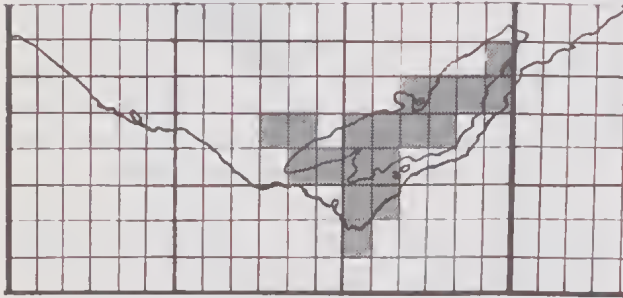


FIG. 5. Distribution of *Victaphanta compacta*

The smallest member of the family, *Prolesophanta dyeri*, is also found mainly in the wet forest areas and is confined to Victoria and Tasmania. The other three species listed as occurring in the study area are tentatively referred to the genus *Rhytida*. Current work (Smith, unpublished data) has shown that the genus *Strangesta*, to which Iredale (1938) referred these species, is incorrect and they should probably be tentatively assigned to the New Zealand genus *Rhytida sensu lato*. *Rhytida* (?) *capillacea* is a large flat species with fine transverse shell sculpture and the Otway Region constitutes its south-westerly distribution limit. It is found in both wet and dry forest areas. *Rhytida* (?) *gawleri* has a large globose shell with fine sculpture and a narrow umbilicus and the Otway Region is its easterly distribution limit. It is found in open dry forest situations. *Rhytida* (?) *ruga* is a small species with a coarsely irregular transversely sculptured shell. This species is found mainly in wet forest situations in Tasmania and southern Victoria.

#### FAMILY CAMAENIDAE

This large, diverse family, dominant in the non-marine moluscan fauna of northern and central Australia, is represented by a single species in the study area. *Chloritobadistes victoriae* is a medium sized snail found commonly in dry forests and scrub throughout the area (Fig. 6). It is characterized by the fine periostracal hairs on the shell.

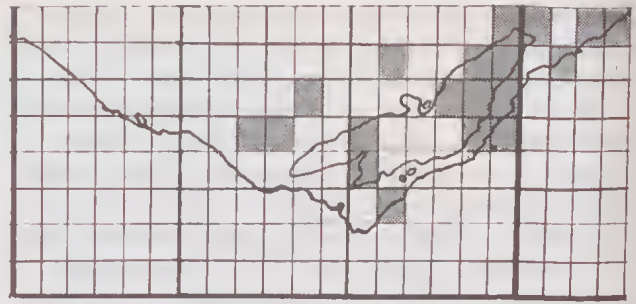


FIG. 6. Distribution of *Chloritobadistes victoriae*

#### FAMILY HELICIDAE

This is the major family of introduced snails in Australia and five species are present within the study area. The largest and most widespread species is *Helix* (*Cryptomphalus*) *aspersa*, the common garden snail, which is commonly found adjacent to permanent dwellings of man (Fig. 7). Another commonly occurring

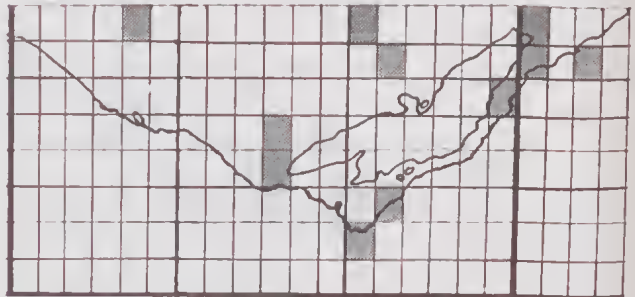


FIG. 7. Distribution of *Helix* (*Cryptomphalus*) *aspersa*

snail along the coastal dune and heathland of the area (Fig. 8) is the white shell with the brown concentric bands, *Theba pisana*. This has been recorded in very large population densities in coastal areas closely associated with human activity (Smith 1967) and has more recently been observed to be spreading into areas away from the coasts (Smith & Plant 1973).

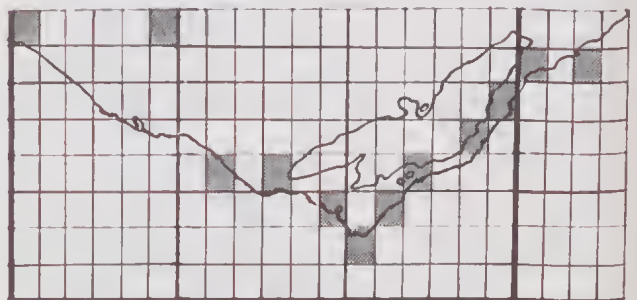


FIG. 8. Distribution of *Theba pisana*.

The small conical snail, *Cochlicella ventrosa* is very widespread and abundant in pasture and marginal cleared land. Small populations of the white snail *Cer-  
nuella* (*Cer-  
nuella*) *virgata* have been reported in the



north-west of the study area. This is a very common pest species in South Australia. A small white species with brown concentric bands found associated with *Theba pisana* on the coasts has recently been re-identified as *Candidula intersepta* by Folco Guisti of Siena (pers. comm.). This species has previously been referred to as *Helicella caperata*.

#### FAMILY HYRIIDAE

There are two species of large freshwater mussels recorded in the area. The taxonomy of this family was revised by McMichael and Hiscock (1958) and the species adequately described. *Velesunio ambiguus* is a large black mussel found in many of the coastal rivers throughout the area. *Hyridella (Hyridella) drapeta* with a brown, thin shell is found in one or two rivers in the north-eastern part of the area, these records constituting the south westerly limit of the species.

#### FAMILY SPHAERIIDAE

The small pea-mussels are very widespread in all types of freshwater habitat in the Otway Region. Three species are tentatively recognised, though a full revision of the sphaeriid fauna of the Region is needed. The small cosmopolitan species, *Pisidium casertanum*, is found in flowing and standing water. The large spherical *Sphaerium tasmanica* occurs in several ponds and dams in the northern part of the area, while the smaller *Sphaerium problematicum* has tentatively been identified from still water in the eastern part.

### HABITAT-FAUNAL ASSOCIATIONS

The non-marine mollusc fauna of the Otway Region can best be understood if considered as a series of habitat-faunal associations. Each major habitat type in the area, as characterised by physical and vegetation factors, has its own molluscan fauna which is unique to that habitat type. Only a few species occur in more than one habitat-faunal association. Each of the habitat types is described in detail below and the molluscan fauna of each given. Abbreviations in the association faunal lists: (I) — introduced species; (E) — endemic to the Otway Region.

#### 1. MARINE INFLUENCE ZONE

This is the strip of land along the coast and beside the tidal reaches of the creeks and rivers, which, although above the regular daily tidal range, receives occasional inundation with sea water. The fauna is largely typical of salt-marshes along the southern coast or, in the aquatic habitat, is a brackish estuarine fauna. Also falling into this general definition is the coastal dune system which is within the range of wind-borne spray from the surf.

#### MOLLUSC FAUNA OF THE MARINE INFLUENCE ZONE

<i>Tatea rufilabris</i>	Brackish
<i>Hydrobia buccinoides</i>	Estuarine
<i>Truncatella scarlarina</i>	Salt-marsh
<i>Assiminea tasmanica</i>	
<i>Marinula meridionalis</i>	
<i>Marinula zanthostoma</i>	
<i>Ophicardelus ornatus</i>	
<i>Salinator solida</i>	
<i>Omegapilla</i> sp.	Coastal dunes
<i>Anstrosuccinea australis</i>	
<i>Magilaoma penolensis</i>	
(I) <i>Theba pisana</i>	
(I) <i>Candidula intersepta</i>	

The fauna of these three habitat types under the general heading of the marine influence zone is the same as that found in similar habitats in other parts of the Victorian coast. The salt-marsh species require inundation by seawater several times a year and are regarded by some as supra-littoral marine species. However they are found in close association with non-marine flora and fauna and can be found separated from the sea by some distance when near a tidal river.

All the coastal dune species can also be found away from the area of marine influence, but form an interesting faunal association in this area.

#### 2. FRESHWATER

The freshwater habitats of the study area are many and varied, from the clear, shallow, fast flowing creeks and rivers of the Ranges to the sluggish drainage streams of the north and the dams and ponds on the cleared land. Unlike the many bodies of enclosed water on the basalt plains of western Victoria there are no highly saline lakes in the study area. Except where the inflow of sea water elevates the salinity, all aquatic habitats are freshwater.

#### MOLLUSC FAUNA OF THE FRESHWATER

*Potamopyrgus niger*  
*Angrobia angasi*  
*Pupipityrx grampianensis*  
 'Hydrobia' *buccinoides*  
*Lymnaea tomentosa*  
*Lymnaea lessona*  
*Physastra gibbosa*  
*Bulinus (Isidorella) hainesii*  
*Glyptophysa aliciae*  
*Gyraulus* sp.  
*Plananaisus tasmanicus*  
*Pygmanisus scottianus*  
*Ferrissia (Pettancylus) tasmanicus*  
*Ferrissia (Pettancylus) petterdi*  
*Velesunio ambiguus*  
*Hyridella (Hyridella) drapeta*  
*Corbiculina angasi*

*Pisidium casertanum*  
*Sphaerium tasmanica*  
*Sphaerium problematicum*

The freshwater fauna of the Otway Region is a rich one, with 20 species present. Of particular interest is the presence of four species of freshwater hydrobiids and six species of planorbids. This reflects the diversity and species composition of the freshwater mollusc fauna of the Southeastern Australian faunal region and all the species listed above occur generally throughout the Region. The fast clear mountain rivers are characterized by the two freshwater limpet species, *Bulinus* (*Isidorella*) *hainesii* either *Planatius tasmanicus*, *Pygmanisus scottianus* or both, two or three species of hydrobiid, a large mussel and a sphacriid. By contrast many of the ponds within the area contain one or two species of Lymnaeid, *Physastra gibbosa*, *Gyraulus* sp. and one or two large sphacriid species.

### 3. WET SCLEROPHYLL AND RAIN FOREST

This is a restricted habitat confined, in the study area, to the Otway Ranges, where the rainfall is very high throughout the year. These wet forests occur on the steep slopes of the Ranges on the Cretaceous rocks and soils and are dominated by *Eucalyptus regnans* and *Nothofagus cunninghamii* with a dense under story and deep fern tree gullies. The ground surface is covered by a rich deep leaf litter with many fallen trees and a permanently wet surface with a rich fungal growth.

This habitat is very similar to the wet sclerophyll forest areas of the Great Dividing Range and parts of Western Tasmania and very different from all the surrounding areas.

#### MOLLUSC FAUNA OF THE WET SCLEROPHYLL AND RAIN FORESTS

*Excellaoma retipora*  
*Thyrasona elenescens*  
 (E) *Pernagera gatliffi*  
*Pernagera tamarensis*  
*Pillomena* (*Pillomena*) *meraca*  
 (E) *Geminoropa scindocataracta*  
 (E) *Allocharopa erskinensis*  
*Robinella subdepressa*  
*Helicarion cnvieri*  
*Cystopelta purpurea*  
 (E) *Victaphanta compacta*  
*Prolesophanta dyeri*  
*Rhytida* (?) *gawleri*  
*Rhytida* (?) *ruga*  
*Chloritobadistes victoriae*

The wet sclerophyll forest contains all four of the species of molluscs considered endemic to the study area. These species have close relatives in similar habitats in the faunal region but are considered specifically distinct. It is of interest to note that the fauna of this habitat type is relatively restricted compared to

similar habitats of the Great Dividing Range. One notable absent species is the charopid *Mulathena fordei*, a comparatively large species, common in Central Victoria and Tasmania (Smith 1975). A wider range of punctid and charopid species would be expected in these other rain forest areas.

### 4. DRY SCLEROPHYLL FOREST AND WOODLAND SCRUB

On the lower slopes of the Ranges and the surrounding hills, on Tertiary rocks and soils, is an open dry sclerophyll forest and woodland scrub. This is typified by mixed *Eucalyptus* spp. and *Acacia* spp. with either little understory and ground cover, or a thick scrub and well drained slopes. There is little leaf-litter and the ground cover and litter is mainly dry. The main habitat for molluscs is underneath fallen logs and bark and the species present can withstand a much drier habitat than the rain forest species.

#### MOLLUSC FAUNA OF DRY SCLEROPHYLL FOREST AND WOODLAND SCRUB

*Austrosuccinea australis*  
*Paralaoma morti*  
*Paralaoma mucoides*  
*Paralaoma halli*  
*Magilaoma penolensis*  
*Trocholaoma* (*Laomavix*) *collisi*  
*Pernagera stanleyensis*  
*Pillomena* (*Oreomava*) *otwayensis*  
*Elsothera funera*  
 (I) *Arion intermedius*  
 (I) *Deroceras reticulatus*  
 (I) *Lehmannia* (*Lehmannia*) *nyctelia*  
*Cystopelta purpurea*  
*Helicarion niger*  
*Rhytida* (?) *capillacea*  
*Chloritobadistes victoriae*

Several of the species, such as *Cystopelta purpurea*, *Rhytida* (?) *capillacea* and *Chloritobadistes victoriae*, occur only in the wetter parts of this habitat type. Three species of introduced slugs are commonly found invading this habitat through the activities of man. Much of the dry forest has been cleared and most of the habitat now occurs in restricted stands surrounded by a man-modified environment.

### 5. AREAS MODIFIED BY MAN

Much of the land in the Otway Region has been cleared over the past 100-150 years of settlement by European man. This has happened mainly on the Tertiary rock areas, but some large areas of Cretaceous soils in the Ranges can be included. The cleared land, with all the original forest vegetation and litter burnt, has been used either for human habitation, for putting down to pasture or crops, or for forest planting, principally of a monoculture of introduced softwoods. All



these activities have resulted in an initial denudation of the original native vegetation and its replacement, either deliberately or accidentally, by introduced plants. This has resulted in an almost total replacement of the native molluscan fauna by an introduced one, principally of pest species.

#### MOLLUSC FAUNA OF AREAS MODIFIED BY MAN

*Paralaoma morti*

*Trocholaoma (Laomavix) collisi*

(I) *Arion intermedius*

(I) *Oxychilus alliarius*

(I) *Oxychilus cellarius*

(I) *Milax gagates*

(I) *Limax maximus*

(I) *Deroceras caruanae*

(I) *Deroceras reticulatus*

(I) *Lehmannia (Lehmannia) nyctelia*

(I) *Lehmannia (Limacus) flavus*

(I) *Ferussacia* sp.

(I) *Helix (Cryptomphalus) aspersa*

(I) *Theba pisana*

(I) *Cochlicella ventrosa*

(I) *Ceriuella (Ceriuella) virgata*

(I) *Candidula intersepta*

Altogether 15 species of introduced molluscs are known from the area, many of which are very abundant and widespread. These include 7 species of slugs and eight species of snails. Only two species of punctids are commonly found in this environment although pockets of native woodland may contain relict populations of that habitat association in an otherwise modified area.

#### DISCUSSION

The non-marine mollusc fauna of the Otway Region is similar to that of the remainder of the South-eastern Australian faunal region. This includes the whole of Victoria and Tasmania and the southern parts of New South Wales and South Australia. This fauna is dominated, both in numbers of species and numbers of individuals, by the endodontoid snails. Many of the species in the fauna have a widespread distribution throughout the faunal region though the level of endemism is also high due to local habitat isolation.

Four species are considered here endemic to the Otway Region and all these are to be found exclusively in the wet sclerophyll and rain forest area of the Otway Ranges. These are:

*Victaphanta compacta*

*Pernagera gutliffi*

*Geminoropa scindocataracta*

*Allocharopa erskinensis*

It is thought that this endemism was brought about by the early isolation of the Otway Ranges. This also brought about the somewhat restricted nature of the wet forest fauna with the absence from it of species

widespread throughout similar habitats in the South-eastern Australian faunal region.

Of the five habitat associations recognised, only one, the wet sclerophyll and rain forests, can be said to be unique to the Otway Region. All the others are to be found in similar habitats in other parts of Victoria. The Otway Region is the south-westerly limit of distribution of a number of east coast species.

However, because of the widespread land clearing carried out in the area and the establishment of large areas of introduced vegetation, the most noticeable elements of the fauna are the introduced species of snails and slugs.

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## APPENDIX

## SYSTEMATIC LIST OF THE NON-MARINE MOLLUSC FAUNA OF THE OTWAY REGION.

Abbreviations: (I) = introduced species; (E) = endemic to the Otway Region.

## Family HYDROBIIDAE

- Tatea rufilabris* (A. Adams, 1862).  
*Potamopyrgus nigra* (Quoy and Gaimard, 1835).  
*Angrobia angasi* (Smith, 1882).  
*Pupiphryx grampianensis* (Gabriel, 1939).  
*'Hydrobia' buccinoides* (Quoy and Gaimard, 1835).

## Family TRUNCATELLIDAE

- Truncatella scarlarina* (Cox, 1867).

## Family ASSIMINEIDAE

- Assiminia tasmanica* (Tenison-Woods, 1875).

## Family ELLOBIIDAE

- Marinula meridionalis* (Brazier, 1877)  
*Marinula zanthostoma* H. and A. Adams, 1854.  
*Ophicardelus ornatus* (Ferussac, 1821).

## Family AMPHIBOLIDAE

- Salinator solida* (von Martens, 1878).

## Family LYMNÆIDAE

- Lymnaea tomentosa* (Pfeiffer, 1855).  
*Lymnaea lessoni* (Deshayes, 1831).

## Family PLANORBIDAE

- Physastra gibbosa* (Gould, 1847).  
*Bulinus (Isidorella) hainesii* (Tryon, 1866).  
*Glyptophysa aliciae* (Reeve, 1862).  
*Gyraulus* sp.  
*Plananinus tasmanicus* (Tenison-Woods, 1876).  
*Pygmaninus scottianus* (Johnston, 1879).

## Family FERRISSIIDAE

- Ferrissia (Pettancylus) tasmanicus* (Tenison-Woods, 1876).

- Ferrissia (Pettancylus) petterdi* (Johnston, 1879).

## Family PUPILLIDAE

- Omegapilla* sp.

## Family SUCCINEIDAE

- Austrosuccinea australis* (Férussac, 1821).

## Family PUNCTIDAE

- Paralaoma morti* (Cox, 1864).  
*Paralaoma mucoides* (Tenison-Woods, 1879).  
*Paralaoma halli* (Legrand, 1871).  
*Excellaoma retipora* (Cox, 1867).  
*Magilaoma penolensis* (Cox, 1868).  
*Trocholaoma (Laomavix) collisi* (Brazier, 1877).

## Family CHAROPIDAE

- Pernagera stanleyensis* (Petterd, 1879).  
(E) *Pernagera gatliffi* (Gabriel, 1930).  
*Pernagera tamarensis* (Petterd, 1879).  
*Pillomena (Pillomena) meraca* (Cox and Hedley, 1912).  
*Pillomena (Oreomava) otwayensis* (Petterd, 1879).  
(E) *Geminoropa scindocataracta* (Gabriel, 1930).  
(E) *Allocharopa erskinensis* (Gabriel, 1930).  
*Roblinella subdepressa* (Brazier, 1871).  
*Elsothera funerea* (Cox, 1868).  
*Thryasona elenescens* (Cox and Hedley, 1912).

## Family ARIONIDAE

- (I) *Arion intermedius* (Normand, 1852).

## Family ZONITIDAE

- (I) *Oxychilus alliarinus* (Millar, 1822).  
(I) *Oxychilus cellarius* (Müller, 1774).

## Family MILACIDAE

- (I) *Milax gagates* (Draparnaud, 1801).

## Family LIMACIDAE

- (I) *Limax maximus* (Linnaeus, 1758).  
(I) *Deroceras caruanae* (Pollonera, 1891).  
(i) *Deroceras reticulatus* (Müller, 1774).  
(I) *Lehmannia (Lehmannia) nyctelia* (Bourguignat, 1861).  
(I) *Lehmannia (Limacus) flavus* (Linnaeus, 1758).

## Family HELICARIONIDAE

- Helicarion niger* (Quoy and Gaimard, 1832).  
*Helicarion cuvieri* Férussac, 1821.

## Family CYSTOPELTIDAE

- Cystopelta purpurea* Davies, 1912.

## Family FERUSSACIIDAE

- (I) *Ferussacia* sp.

## Family RHYTIDIDAE (PARYPHANTIDAE)

- (E) *Victaphanta compacta* (Cox and Hedley, 1912).  
*Prolesophanta dyeri* (Petterd, 1879).  
*Rhytida (?) capillacea* (Férussac, 1822).  
*Rhytida (?) gawleri* (Brazier, 1872).  
*Rhytida (?) ruga* (Legrand, 1871).



## Family CAMAENIDAE

*Chloritobadistes victoriae* (Cox, 1868).

## Family HELICIDAE

(1) *Helix (Cryptomphalus) aspersa* (Born, 1778).

(1) *Theba pisana* (Muller, 1774).

(1) *Cochlicella ventrosa* (Férussac, 1819).

(1) *Cermtella (Cernuella) virgata* (Da Costa, 1779).

(1) *Candidula intersecta* (Poiret, 1801).

## Family HYRIIDAE

*Velesunio ambiguus* (Philippi, 1847)

*Hyridella (Hyridella) drapeta* (Iredale, 1934).

## Family CORBICULINIDAE

*Corbiculina angasi* (Princ, 1864).

## Family SPHAERIIDAE

*Pisidium casertanum* (Poli, 1795).

*Sphaerium tasmanica* (Tenison-Woods, 1876).

*Sphaerium problematicum* (Gabriel, 1939).